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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,634	11/13/2003	Kazuhisa Yamamoto	YAO-3750US6	2125

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EXAMINER	
NGUYEN, DUNG T	

ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/712,634	YAMAMOTO ET AL.	
	Examiner	Art Unit	
	Dung (Michael) T. Nguyen	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *78-90* is/are pending in the application.

4a) Of the above claim(s) *78,79 and 86-90* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *80-85* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/13/03,12/22/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of the invention Group II (claims 80-85) in the reply filed on 12/22/05 is acknowledged. The traversal is on the ground(s) that claims 80 and 84 (applicants' typo error of claim 85) are generic. This is not found persuasive because claims 80 and 84 are not generic as alleged by applicants because of the following reasons:

Where two or more species are claimed, a requirement for restriction to a single species may be proper if the species are mutually exclusive. Claims to different species are mutually exclusive if one claim recites limitations disclosed for a first species but not a second, while a second claim recites limitations disclosed only for the second species and not the first (MPEP 806.04 (f). Claims 80 and 84 do not encompass all limitations of claims 78 and 86. For example, claims 80 and 84 include a semiconductor laser pumping light and a solid state laser crystal, whereas claim 78includes a semiconductor laser for emitting a fundamental wave which is different from a laser for pumping light. Similarly, elements claimed in claim 86 are not included in claims 80 and 84 and vice versa. For the above reason, the search for one species does not necessarily include the search for other species, hence impose undue burden on the examiner. In addition, as noted in the previous restriction requirement, should applicants traverse on the ground that the species are not patentably distinct, applicants should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. Applicants have failed to prove such evidence in response to the examiner's restriction requirement.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 80-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Byer et al. (5036220) in view of Tanabe (5119361).

With respect to claim 80, Byer et al. show in Fig.1 a solid state laser crystal (12) (column 4, lines 3-5) generating a fundamental wave; and an optical wavelength conversion element (11) for receiving the fundamental wave and generating a harmonic wave (column 6, lines 4-5), the optical wavelength conversion element having periodic domain inverted structures (column 5, lines 15-49).

Byer et al. lack a semiconductor laser for emitting a pumped light and a fiber for conveying the pumped light to the solid state laser crystal.

Tanabe teaches in Fig.3-4 a semiconductor laser (20) for emitting a pumped light and a fiber (12) for conveying the pumped light.

Byer et al. and Tanabe are under the same analogous art of laser.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Byer et al. what is taught by Tanabe in order to pump (excite) the solid state laser crystal for generating a fundamental wavelength (column 4, lines 38-41 and 54-57).

With respect to claim 81, Byer et al. show in Fig.1 the optical wavelength conversion element (11) having a modulation function (see arrow output from element (11)).

With respect to claim 82, Byer et al. disclose the optical wavelength conversion element (11) is formed in a LiNb.subx.Ta.sub1-x.O.sub3. (0 <= x <= 1) substrate (14) (the examiner selects x = 1 and therefore LiNb.subx.Ta.sub1-x.O.sub3. becomes LiNbO.sub3) (column 4, lines 16-17).

Claim 83 is rejected under 35 U.S.C. 103(a) as being unpatentable over Byer et al. (5036220) in view of Tanabe (5119361) and further in view of Hanihara (5430756).

With respect to claim 83, Byer et al. and Tanabe disclose all limitations of the claim 80 except for the solid state laser crystal and the optical wavelength conversion element are integrated together.

Hanihara teaches in Fig. 1 the solid state laser crystal (3) and the optical wavelength conversion element (4) are integrated together.

Byer et al., Tanabe, and Hanihara are under the same analogous art of laser.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Byer et al. and Tanabe what is taught by Hanihara in order to avoid an alignment of optical parts (between the solid state laser crystal and the optical wavelength conversion element) and to make the length of the laser resonator short (column 2, lines 38-46).

Claims 84-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Byer et al. (5036220) in view of Tanabe (5119361) and further in view of Covey (4919506).

With respect to claim 84, Byer et al. show in Fig.1 a solid state laser crystal (12) (column 4, lines 3-5) generating a fundamental wave; a fiber (17) for conveying the fundamental wave; and an optical wavelength conversion element (11) for receiving the fundamental wave and generating a harmonic wave (column 6, lines 4-5), the optical wavelength conversion element having periodic domain inverted structures (column 5, lines 15-49).

Byer et al. lack a semiconductor laser for emitting a pumped light and a fiber for conveying the pumped light to the solid state laser crystal.

Tanabe teaches a semiconductor laser (20) for emitting a pumped light (column 5, lines 20-22).

Byer et al. and Tanabe are under the same analogous art of laser.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Byer et al. what is taught by Tanabe in order to pump (excite) the solid state laser crystal for generating a fundamental wavelength (column 4, lines 38-41 and 54-57).

However, Byer et al. and Tanabe lack a single mode fiber for conveying the fundamental from the solid state laser.

Covey teaches a single mode fiber for conveying the fundamental from the solid state laser (column 1, lines 20-21).

Byer et al., Tanabe, and Covey are under the same analogous art of laser.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Byer et al. and Tanabe what is taught by Covey to eliminate or reduce velocity dispersion in the propagated light signal and hence to obtain an efficient laser light coupling (column 1, lines 14-17 and 20-22).

With respect to claim 81, Byer et al. show in Fig.1 the optical wavelength conversion element (11) having a modulation function (see arrow output from element (11)).

Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (571) 272-1949. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Michael Dung Nguyen
03/01/06